TEST-2

A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

	Column A	Column B
1.	0.8	$\frac{1}{2} + \frac{1}{3}$

Pat is older than Lee, and Lee is younger than Maria.

2.	Maria's age	Pat's age

A farmer has two large plots of land that are equal in area. The first is divided into 16 parcels with n acres in each and the second is divided into 20 parcels with m acres in each.

3.	n	m

$x > 1$

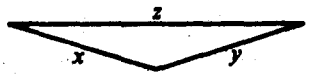
4.	$x - 4$	-2

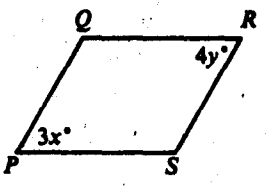
Rectangular region R has width 8 and perimeter 40.

5.	The area of R	256
6.	$4n^2$	$(2n + 1)(2n - 1)$

a and b are both greater than 0 and less than 1.

7.	$a^2 + b^2$	$a + b$

	Column A	Column B
8.	 $x + y$	z
9.	3^x	4^x



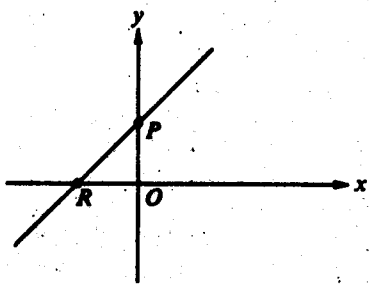
$PQRS$ is a parallelogram.

10.	x	y
11.	The sum of all the integers from 19 to 59, inclusive	The sum of all the integers from 22 to 60, inclusive

GO ON TO THE NEXT PAGE.

A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

Column A	Column B



The equation of the line graphed on the rectangular coordinate system above is:

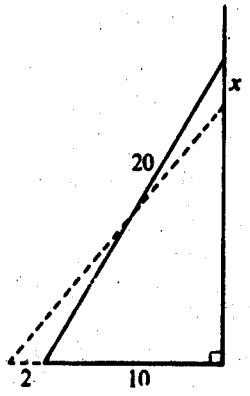
$$y = \frac{8x}{9} + 3$$

12.	PO	RO

$0 > a > b$

13.	ab	$(ab)^2$

Column A	Column B



A 20-foot ladder leaning against a vertical wall with the base of the ladder 10 feet from the wall is pulled 2 feet farther out from the wall, causing the top of the ladder to drop x feet.

14.	x	2
15.	$\frac{99^9}{9^{99}}$	$\frac{11^9}{9^{90}}$

GO ON TO THE NEXT PAGE.

Directions: Each of the Questions 16-30 has five answer choices. For each of these questions, select the best of the answer choices given.

16. If the sales tax on an appliance priced at \$300 is between 5 percent and 8 percent, then the cost (price plus sales tax) of the appliance could be

(A) \$310
(B) \$312
(C) \$314
(D) \$318
(E) \$325

17. $2[2x + (3x + 5x)] - (3x + 5x) =$

(A) $4x$
(B) $8x$
(C) $10x$
(D) $12x$
(E) $22x$

18. Which of the following is the product of two positive integers whose sum is 3 ?

(A) 0
(B) 1
(C) 2
(D) 3
(E) 4

19. If an integer y is subtracted from an integer x and the result is greater than x, then y must be

(A) equal to x .
(B) less than 0
(C) less than x
(D) greater than 0
(E) greater than x

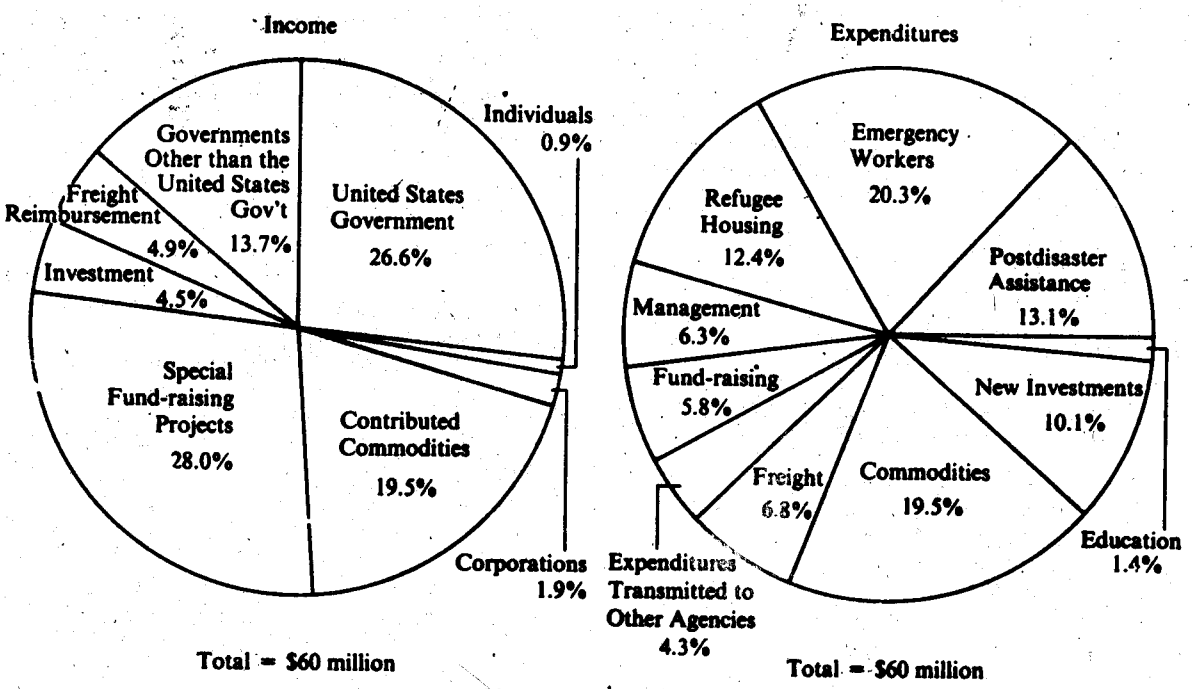
20. A circle with radius 2 is intersected by a line at points R and T. The maximum possible distance between R and T is

(A) 1
(B) 2
(C) π
(D) 4
(E) 4π

GO ON TO THE NEXT PAGE.

Questions 21-25 refer to the following graphs.

INCOME AND EXPENDITURES OF AN INTERNATIONAL SERVICE AGENCY—YEAR *X*



Note: Drawn to scale.

GO ON TO THE NEXT PAGE.

Approximately how much of the agency's income was provided by contributed commodities?

(A) $12 million
(B) $14 mill
(C) $15 million
(D) $17 million
(E) $19 million

22. Of the following, the category that had expenditures most nearly equal to the average (arithmetic mean) expenditures per category was

(A) refugee housing
(B) emergency workers
(C) postdisaster assistance
(D) new investments
(E) commodities

23. Income from which of the following sources was most nearly equal to $2.9 million?

(A) United States government
(B) Freight reimbursement
(C) Investment
(D) Individuals
(E) Corporations

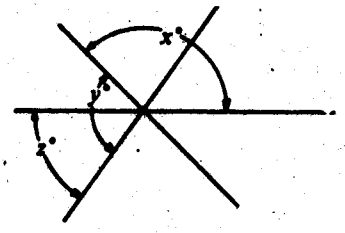
*24. In year X, $\frac{1}{3}$ of the agency's refugee housing expenditures, $\frac{1}{5}$ of its emergency workers expenditures, $\frac{1}{4}$ of its commodities expenditures, and $\frac{2}{3}$ of its postdisaster assistance expenditures were directly related to one earthquake. The total of these expenditures was approximately how many millions of dollars?

(A) 5
(B) 7
(C) 9
(D) 11
(E) 13

25. Of the following, which is the closest approximation to the percent of freight expenditures NOT covered by freight reimbursement income?

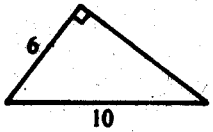
(A) 12%
(B) 28%
(C) 35%
(D) 39%
(E) 72%

GO ON TO THE NEXT PAGE.



26. In the figure above, if $x = 110$ and $y = 120$, then $z =$

(A) 10
(B) 40
(C) 50
(D) 60
(E) 70



27. What is the area of the triangular region above?

(A) 24
(B) 30
(C) 40
(D) 48
(E) 60

28. A widow received $\frac{1}{3}$ of her husband's estate, and each of her three sons received $\frac{1}{3}$ of the balance. If the widow and one of her sons received a total of $60,000 from the estate, what was the amount of the estate?

(A) $90,000
(B) $96,000
(C) $108,000
(D) $135,000
(E) $180,000

29. If $\frac{x+2}{y-3} = 0$, which of the following must be true?

(A) $x = 2$ and $y = 3$
(B) $x = 2$ and $y \neq 3$
(C) $x = 0$ and $y = 0$
(D) $x = -2$ and $y = 3$
(E) $x = -2$ and $y \neq 3$

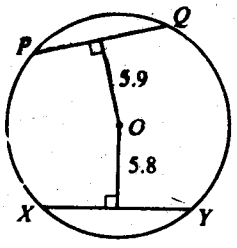
30. If $x = 0.888$, $y = \sqrt{0.888}$, and $z = (0.888)^2$, then which of the following is true?

(A) $x < y < z$
(B) $x < z < y$
(C) $y < x < z$
(D) $y < z < x$
(E) $z < x < y$

T 2, Sect 5

A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

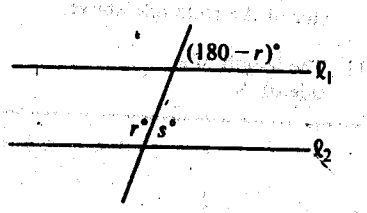
	Column A	Column B
1.	$\frac{4}{5} - \frac{4}{7}$	$\frac{4}{7} - \frac{2}{5}$
2.	The average (arithmetic mean) of 87, 95, and 130	The average (arithmetic mean) of 88, 95, and 129
3.	The time that it takes Jim to drive 300 miles at a speed of 52 miles per hour	The time that it takes Lila to drive 240 miles at a speed of 40 miles per hour
4.	$(-5)^6$	$(-6)^5$
	Ms. Rogers bought an electric range on the installment plan. The cash price of the range was \$400. The amount she paid was \$120 down and 12 monthly payments of \$28 each.	
5.	The amount she paid for the electric range in excess of the cash price	\$56



Circle with center O

6.	The length of chord PQ	The length of chord XY

	Column A	Column B
	$\frac{n}{x} = 428$ and $\frac{n}{y} = 107$. $n > 0$	
7.	x	y



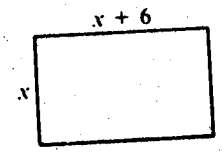
$\ell_1 \parallel \ell_2$

8.	s	60
	6 is x percent of 24. y is 25 percent of 96.	
9.	x	y
	$2x + y < 3$ $x > 2$	
10.	y	0

GO ON TO THE NEXT PAGE.

A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

Column A	Column B



The perimeter of square S is equal to the perimeter of the rectangle above.

11. The length of a side of S | $x + 3$

Column A	Column B

$0 < a < b < c$

12. $\frac{b}{a}$ | $\frac{c}{b}$

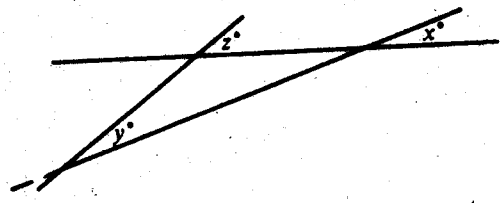
C is a circle with radius 3.

13. The ratio of the circumference of C to the diameter of C | 3

Column A	Column B

$rt > 0$

14. $\frac{3}{r} + \frac{4}{t}$ | $\frac{3t + 4r}{r + t}$



15. $z - x$ | y

GO ON TO THE NEXT PAGE.

Directions: Each of the Questions 16-30 has five answer choices. For each of these questions, select the best of the answer choices given.

16. $\frac{9^2 - 6^2}{3} =$

(A) 1
(B) $\frac{15}{9}$
(C) 5
(D) 8
(E) 15

17. What is 0.423658 rounded to the nearest thousandth?

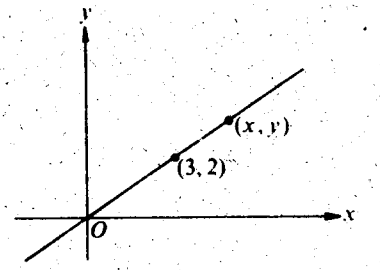
(A) 0.42
(B) 0.423
(C) 0.424
(D) 0.4236
(E) 0.4237

18. If $3(x + 2) = x - 4$, then $x =$

(A) -5
(B) -3
(C) 1
(D) 3
(E) 5

19. If $x^2 + 2xy + y^2 = 9$, then $(x + y)^4 =$

(A) 3
(B) 18
(C) 27
(D) 36
(E) 81



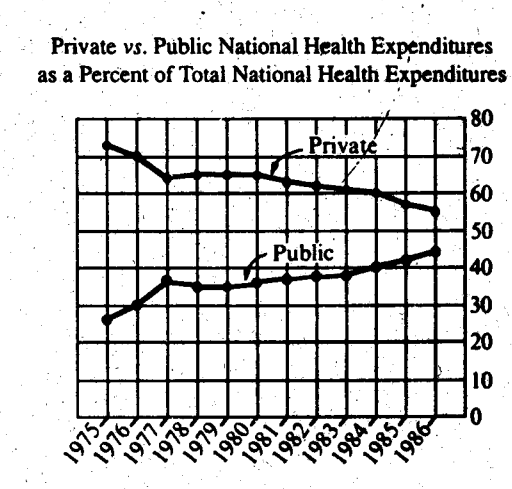
20. In the rectangular coordinate system above, if $x = 4.8$, then $y =$

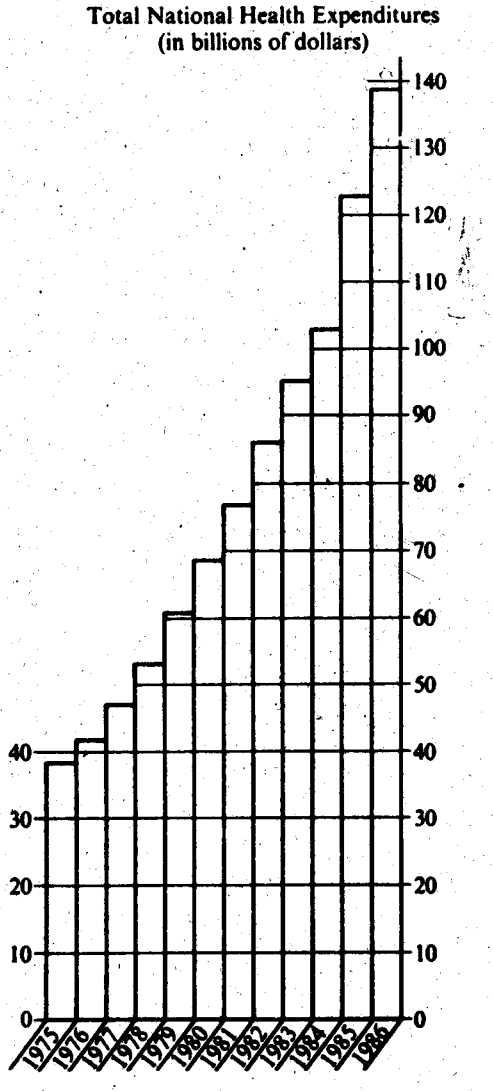
(A) 3.0
(B) 3.2
(C) 3.4
(D) 3.6
(E) 3.8

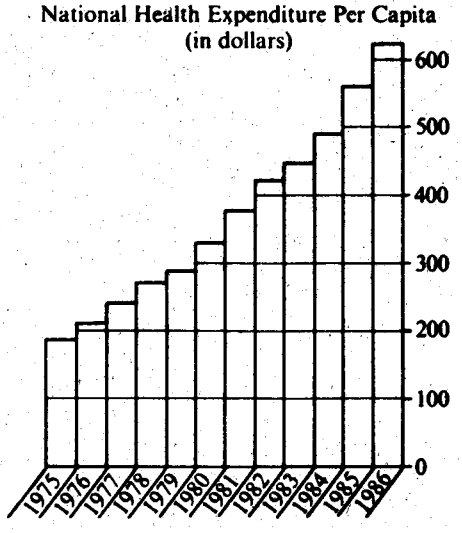
GO ON TO THE NEXT PAGE.

Questions 21-25 refer to the following graphs.

NATIONAL HEALTH EXPENDITURES FOR COUNTRY *X*, 1975-1986
(1 billion = 1,000,000,000)







Note: Drawn to scale.

GO ON TO THE NEXT PAGE.

21. For how many of the years shown was the amount of private health expenditures at least double the amount of public health expenditures?

(A) None
(B) One
(C) Two
(D) Three
(E) Four

22. In which of the years from 1975 through 1986 was the national health expenditure per capita most nearly equal to half the per capita expenditure for 1984 ?

(A) 1975
(B) 1977
(C) 1979
(D) 1980
(E) 1982

23. Of the following, which is the best approximation of the percent increase in the national health expenditure per capita from 1981 to 1982 ?

(A) 35%
(B) 30%
(C) 20%
(D) 10%
(E) 5%

24. Of the following, which is closest to the amount of public national health expenditures, in billions of dollars, in 1980 ?

(A) 25
(B) 30
(C) 35
(D) 45
(E) 70

25. It can be inferred from the graphs that in 1977 the population of Country X, in millions, was closest to which of the following?

(A) 120
(B) 150
(C) 190
(D) 240
(E) 250

26. If x is the number on the number line between 5 and 15 that is twice as far from 5 as from 15, then x is

(A) $5\frac{2}{3}$

(B) 10

(C) $11\frac{2}{3}$

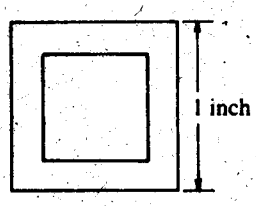
(D) $12\frac{1}{2}$

(E) $13\frac{1}{3}$

27. Jane has exactly 3 times as many Canadian as non-Canadian stamps in her collection. Which of the following CANNOT be the number of stamps in Jane's collection?

(A) 96
(B) 80
(C) 72
(D) 68
(E) 54

GO ON TO THE NEXT PAGE.



28. In the figure above, if the area of the smaller square region is $\frac{1}{2}$ the area of the larger square region, then the diagonal of the larger square is how many inches longer than the diagonal of the smaller square?

(A) $\sqrt{2} - 1$

(B) $\frac{1}{2}$

(C) $\frac{\sqrt{2}}{2}$

(D) $\frac{\sqrt{2} + 1}{2}$

(E) $\sqrt{2}$

29. A distillate flows into an empty 64-gallon drum at spout A and out of the drum at spout B. If the rate of flow through A is 2 gallons per hour, how many gallons per hour must flow out at spout B so that the drum is full in exactly 96 hours?

(A) $\frac{3}{8}$

(B) $\frac{1}{2}$

(C) $\frac{2}{3}$

(D) $\frac{4}{3}$

(E) $\frac{8}{3}$

30. A farmer has two rectangular fields. The larger field has twice the length and 4 times the width of the smaller field. If the smaller field has area K, then the area of the larger field is greater than the area of the smaller field by what amount?

(A) $2K$
(B) $6K$
(C) $7K$
(D) $8K$
(E) $12K$

FOR GENERAL TEST 2 ONLY
Answer Key and Percentages* of Examinees Answering Each Question Correctly

VERBAL ABILITY

Section 1			Section 4		
Number	Answer	P+	Number	Answer	P+
1	A	79	1	C	76
2	D	95	2	D	70
3	A	88	3	A	57
4	C	75	4	E	72
5	E	56	5	C	83
6	B	57	6	E	55
7	D	42	7	B	52
8	C	82	8	E	89
9	B	87	9	B	83
10	E	86	10	C	85
11	D	83	11	D	76
12	D	66	12	D	52
13	E	38	13	E	51
14	D	35	14	E	38
15	C	27	15	A	26
16	B	20	16	B	25
17	B	72	17	E	34
18	E	76	18	C	77
19	A	52	19	D	45
20	B	48	20	A	36
21	A	46	21	A	92
22	C	79	22	D	83
23	B	73	23	A	79
24	C	47	24	E	59
25	E	32	25	B	40
26	D	47	26	C	75
27	B	59	27	D	55
28	B	94	28	A	96
29	A	88	29	D	82
30	B	80	30	C	92
31	A	82	31	E	63
32	C	76	32	D	34
33	A	42	33	B	37
34	D	36	34	B	38
35	D	23	35	A	37
36	C	26	36	D	31
37	C	27	37	E	27
38	A	20	38	A	26

QUANTITATIVE ABILITY

Section 2			Section 5		
Number	Answer	P+	Number	Answer	P+
1	B	80	1	A	82
2	D	82	2	C	89
3	A	78	3	B	77
4	D	80	4	A	86
5	B	81	5	C	79
6	A	76	6	B	70
7	B	72	7	B	66
8	A	62	8	D	72
9	D	59	9	A	65
10	A	56	10	B	77
11	C	36	11	C	61
12	B	38	12	D	47
13	D	34	13	A	61
14	B	27	14	D	39
15	C	22	15	C	30
16	D	94	16	E	92
17	D	79	17	C	88
18	C	78	18	A	80
19	B	74	19	E	71
20	D	72	20	B	53
21	A	82	21	C	78
22	D	75	22	B	81
23	B	69	23	D	62
24	E	52	24	A	21
25	B	40	25	C	42
26	C	61	26	C	52
27	A	52	27	E	52
28	C	48	28	A	27
29	E	40	29	D	35
30	E	39	30	C	20

ANALYTICAL ABILITY

Section 3			Section 6		
Number	Answer	P+	Number	Answer	P+
1	D	73	1	B	90
2	B	65	2	D	79
3	E	52	3	E	36
4	C	82	4	E	58
5	C	42	5	D	79
6	E	50	6	C	75
7	A	92	7	C	66
8	A	78	8	D	77
9	B	68	9	E	71
10	D	81	10	B	50
11	B	77	11	E	61
12	C	62	12	E	52
13	E	61	13	B	76
14	E	48	14	A	35
15	A	53	15	A	51
16	D	48	16	A	58
17	B	40	17	C	43
18	A	34	18	B	38
19	C	62	19	E	61
20	C	46	20	C	45
21	A	27	21	C	58
22	B	46	22	B	60
23	E	58	23	C	68
24	D	46	24	E	44
25	E	28	25	B	45

*Estimated P+ for the group of examinees who took the GRE General Test in a recent three-year period.

TEST 3 SECT 2

A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

	Column A	Column B
1.	$10.0 + 0.9$	$9(1.0 + 0.09)$
	$r = 30$ $r + R = 59$	
2.	r^2	R^2
	$\frac{4}{9} = \frac{7 \times 4}{N \times 9}$	
3.	N	9
4.	$\frac{2}{3} + \frac{1}{2} + \frac{7}{8}$	$\frac{3}{2}$

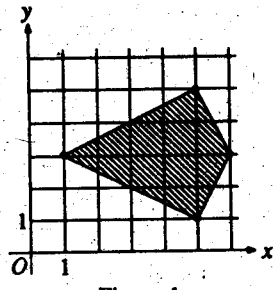


Figure 1

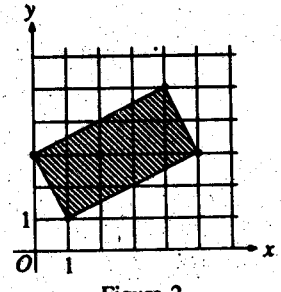
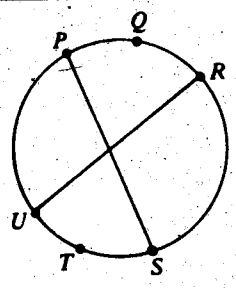


Figure 2

Note: Drawn to scale.

	Column A	Column B
5.	The area of the shaded region shown in Figure 1	The area of the shaded region shown in Figure 2

	Column A	Column B
	Let the "drop" of a square be defined as the perimeter of the square minus the length of one side.	
6.	The drop of a square with area 25	20
7.	A bonus of \$450 plus a 9 percent increase in annual salary	A bonus of \$500 plus an 8.5 percent increase in annual salary



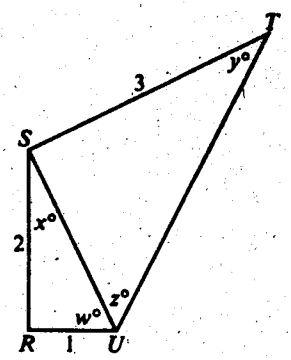
P, Q, R, S, T, and U are points on the circle as shown.

	Column A	Column B
8.	The length of arc PQR	The length of arc STU
	$x > 0$	
9.	The total number of liters of water in x tanks, each containing 20 liters of water, and $2x$ tanks, each containing 35 liters of water	The total number of liters of water in x tanks, each containing 25 liters of water, and $2x$ tanks, each containing 30 liters of water

GO ON TO THE NEXT PAGE.

A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

Column A	Column B



$w + x = 90$
$y + z = 90$

10.	The perimeter of *RSTU*	10
11.	$(x - 2)^2$	$(x + 2)^2$

$(8)(16)(32)(64) = 2^{x+y}$

12.	The average (arithmetic mean) of x and y	9

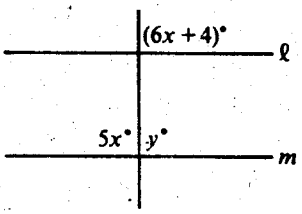
Column A	Column B

$(a + b)^2 = 49$
$ab = 12$

13.	$a + b$	7

$x = 1 - y$

14.	$x^2 + 2xy + y^2$	$x + y$

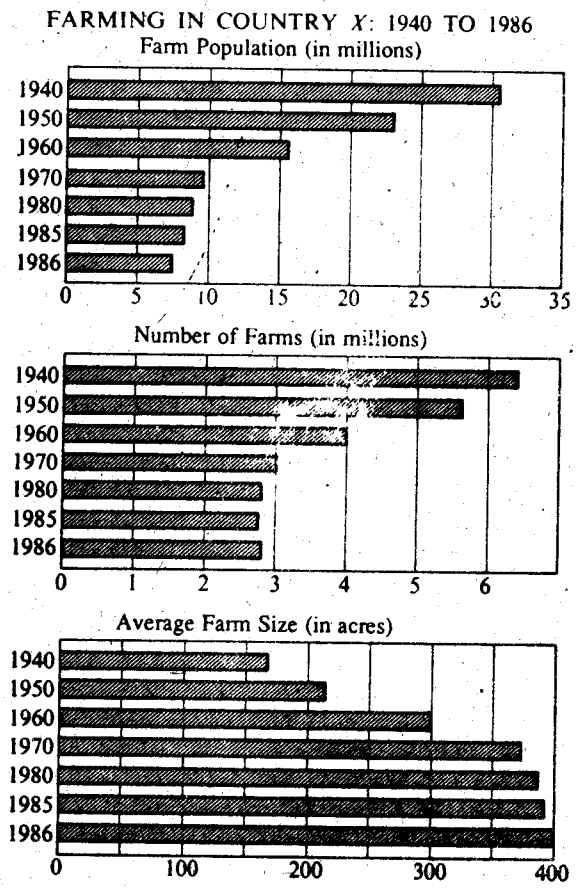


$\ell \parallel m$

15.	y	90

GO ON TO THE NEXT PAGE.

Questions 21-25 refer to the following graphs.



Note: All graphs drawn to scale.

21. Country *X*'s farm population in 1986 was approximately how many million?

(A) 2.5
(B) 5.5
(C) 7.5
(D) 9.0
(E) 10.0

22. The decrease, in millions, in the number of farms from 1950 to 1970 was approximately

(A) 1.6
(B) 2.0
(C) 2.6
(D) 3.0
(E) 3.6

23. To the nearest 10 percent, the decline in farm population in Country *X* between 1950 and 1960 represented what percent of the 19[illegible] farm population?

(A) 10%
(B) 30%
(C) 50%
(D) 60%
(E) 150%

GO ON TO THE NEXT PAGE.

Directions: Each of the Questions 16-30 has five answer choices. For each of these questions, select the best of the answer choices given.

16. In a certain class, if there are 35 men and 63 women, then the ratio of men to women is

(A) $\frac{7}{20}$

(B) $\frac{3}{7}$

(C) $\frac{5}{9}$

(D) $\frac{5}{7}$

(E) $\frac{7}{9}$

17. Streets L, M, and N are straight and level, and they intersect to form a triangle. If streets L and M intersect at a 40° angle and if street N is perpendicular to street M, at what acute angle do streets L and N intersect?

(A) 30°
(B) 35°
(C) 40°
(D) 45°
(E) 50°

18. $\left(1-\frac{1}{2}\right)^2\left(1-\frac{1}{3}\right)^2 =$

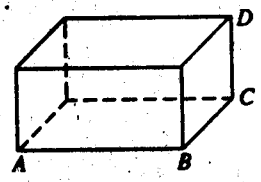
(A) $\frac{25}{36}$

(B) $\frac{1}{3}$

(C) $\frac{1}{6}$

(D) $\frac{1}{9}$

(E) $\frac{1}{18}$



19. The figure above is a rectangular solid with $AB = 10$, $BC = 10$, and $CD = 3$. What is the total surface area of the figure?

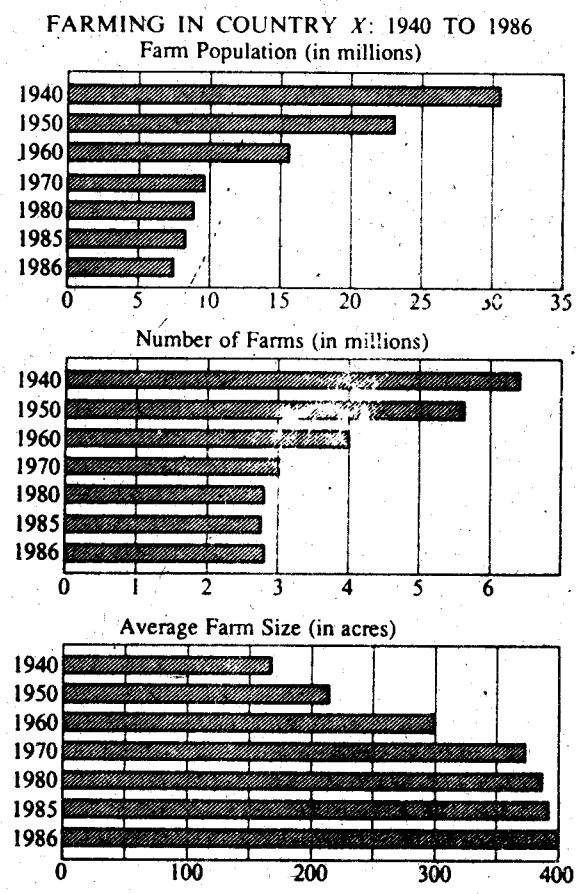
(A) 320
(B) 300
(C) 220
(D) 160
(E) 23

20. $6x^2 - 15x - 21 =$

(A) $3(2x + 7)(x - 1)$
(B) $3(2x - 7)(x + 1)$
(C) $3(2x - 1)(x + 7)$
(D) $-9x^2 - 21$
(E) $-9x - 21$

GO ON TO THE NEXT PAGE.

Questions 21-25 refer to the following graphs.



Note: All graphs drawn to scale.

21. Country X's farm population in 1986 was approximately how many million?

(A) 2.5
(B) 5.5
(C) 7.5
(D) 9.0
(E) 10.0

22. The decrease, in millions, in the number of farms from 1950 to 1970 was approximately

(A) 1.6
(B) 2.0
(C) 2.6
(D) 3.0
(E) 3.6

23. To the nearest 10 percent, the decline in farm population in Country X between 1950 and 1960 represented what percent of the 19[illegible] farm population?

(A) 10%
(B) 30%
(C) 50%
(D) 60%
(E) 150%

GO ON TO THE NEXT PAGE.

24. In Country X, the average farm size in 1940 was approximately what fraction of the average farm size in 1986?

(A) $\frac{1}{4}$

(B) $\frac{2}{5}$

(C) $\frac{3}{5}$

(D) $\frac{2}{3}$

(E) $\frac{3}{4}$

25. In 1986, Country X had approximately how many million acres of farmland?

(A) 1,100
(B) 400
(C) 140
(D) 11
(E) 3

GO ON TO THE NEXT PAGE.

26. If n is the average (arithmetic mean) of the three numbers 6, 9, and k, what is the value of k in terms of n?

(A) $3n - 15$

(B) $n - 5$

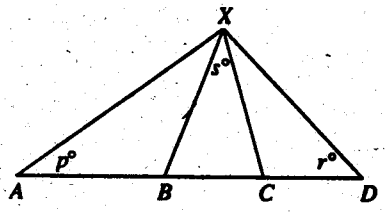
(C) $n - 15$

(D) $\frac{n - 15}{3}$

(E) $\frac{n + 15}{3}$

27. Which of the following CANNOT be expressed as the sum of the squares of two integers?

(A) 13
(B) 17
(C) 21
(D) 29
(E) 34



28. If $AB = BX$ and $XC = CD$ in the figure above, what is s in terms of p and r?

(A) $180 - 2(p + r)$

(B) $p + r - 90$

(C) $2(p + r)$

(D) $p + r$

(E) $\frac{p + r}{2}$

29. Mary has 3 dollars more than Bill has, but 5 dollars less than Jane has. If Mary has x dollars, how many dollars do Jane and Bill have altogether?

(A) $2x - 8$
(B) $2x - 5$
(C) $2x - 2$
(D) $2x + 2$
(E) $2x + 8$

30. If n is an integer divisible by 6 but not by 4, then which of the following CANNOT be an integer?

(A) $\frac{n}{2}$

(B) $\frac{n}{3}$

(C) $\frac{n}{6}$

(D) $\frac{n}{10}$

(E) $\frac{n}{12}$

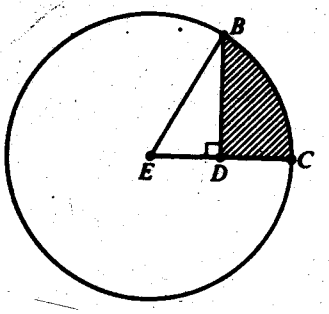
TEST 3 SECT 6

A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

	Column A	Column B
1.	$\frac{3}{7}$	$\frac{9}{49}$

$2x + 3y = 3x + 2y$

2.	x	y



The circle with center E has radius r.

$ED = \frac{r}{2}$

3.	The area of $\triangle EBD$	The area of the shaded region

$xy \neq 0$

4.	$\frac{x-y}{x}$	$\frac{x-y}{y}$
5.	$\sqrt{21} + \sqrt{15}$	$\sqrt{21+15}$

	Column A	Column B

$x > y > 0$

6.	$y - x$	0
7.	The area of a circular region with circumference 16π	The circumference of a circular region with area 16π

$3 < x < 4$
$y = 5$

8.	$\frac{x}{y}$	0.7

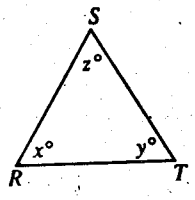
A discount of 40 percent of the original selling price of an item reduces the price to \$72.

9.	The original selling price of the item	\$120

GO ON TO THE NEXT PAGE

A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

Column A	Column B



$x = z$

10. RT RS.

Item X costs twice as much as item Z, and item Y costs \$3 more than half the cost of item Z.

11. The cost of item X The cost of item Y

For all integers x and y, let $x \bigstar y$ be defined as follows.

$$x \bigstar y = -|x + y|$$

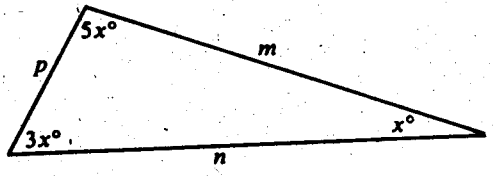
12. $3 \bigstar (-4)$ $3 - 4$

13. 0.4 $\sqrt{0.4}$

Column A	Column B

A rectangular textbook page measures $8\frac{1}{2}$ inches by 11 inches. The page is partitioned into rectangular spaces each $\frac{1}{12}$ inch by $\frac{1}{8}$ inch.

14. The number of such spaces on the textbook page $17 \times 11 \times 48$



15. n^2 $p^2 + m^2$

GO ON TO THE NEXT PAGE.

Directions: Each of the Questions 16-30 has five answer choices. For each of these questions, select the best of the answer choices given.

16. If $2x + y = 8$ and $3x = 6$, then $y =$

(A) 2
(B) 4
(C) 6
(D) 8
(E) 12

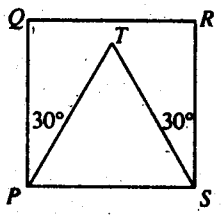
	Number of Lawn Mowers
Monday	752
Tuesday	747
Wednesday	755
Thursday	754
Friday	

17. The table above shows the number of lawn mowers produced by Company L each workday last week except Friday. If Company L produced an average (arithmetic mean) of 750 lawn mowers per day for the workweek, how many lawn mowers did it produce on Friday?

(A) 736
(B) 739
(C) 742
(D) 750
(E) 758

18. Mario bought equal numbers of 2-cent and 3-cent stamps. If the total cost of the stamps was $1.00, what was the total number of stamps bought?

(A) 25
(B) 34
(C) 40
(D) 46
(E) 50



19. In square $PQRS$ above, $\triangle PTS$ has a perimeter of 30. What is the area of square $PQRS$?

(A) 30
(B) 50
(C) 60
(D) 75
(E) 100

20. If $r > 0$, then $\sqrt{0.25r^6} =$

(A) $0.05r^3$
(B) $0.05r^4$
(C) $0.05r^5$
(D) $0.5r^2$
(E) $0.5r^3$

GO ON TO THE NEXT PAGE.

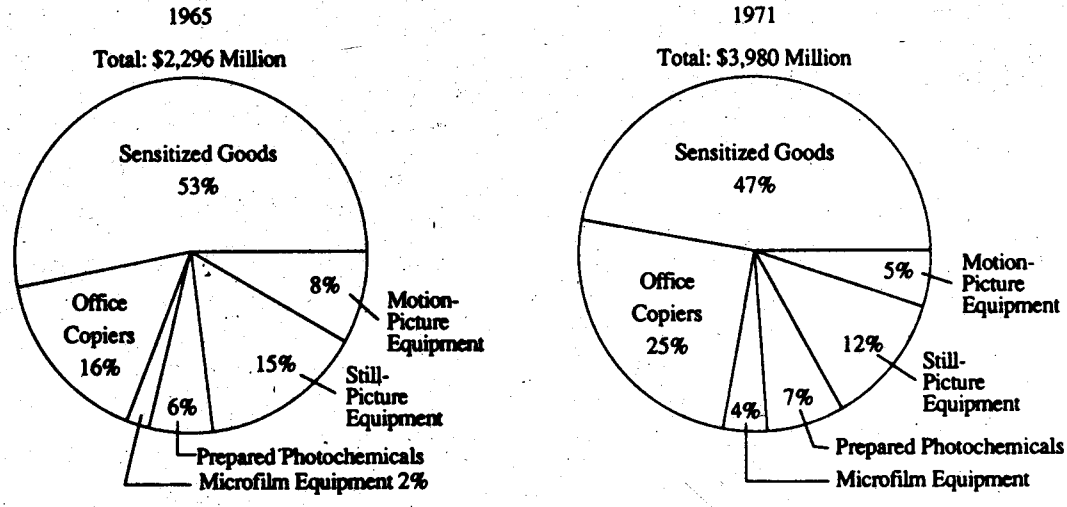
Questions 21-25 refer to the following data.

PRODUCTION OF PHOTOGRAPHIC EQUIPMENT AND SUPPLIES

World Production 1965-1969
(value in millions of dollars)

Country	1965		1966		1967		1968		1969	
	Value	Percent of Total	Value	Percent of Total	Value	Percent of Total	Value	Percent of Total	Value	Percent of Total
United States ----	2,296	64.5	2,831	67.5	3,138	68.4	3,505	68.4	3,770	67.0
Japan ----------	350	9.8	371	8.9	411	9.0	450	8.8	550	9.8
West Germany---	350	9.8	363	8.7	370	8.1	439	8.6	510	9.1
United Kingdom -	247	7.0	274	6.5	283	6.2	299	5.8	310	5.5
France----------	96	2.7	95	2.3	106	2.3	120	2.4	140	2.5
Belgium --------	95	2.7	104	2.5	107	2.3	115	2.3	130	2.3
Italy ----------	76	2.1	80	1.9	89	2.0	105	2.1	115	2.1
Other countries --	50	1.4	72	1.7	76	1.7	82	1.6	95	1.7
Total -----	3,560	100.0	4,190	100.0	4,580	100.0	5,115	100.0	5,620	100.0

UNITED STATES PRODUCTION



GO ON TO THE NEXT PAGE.

21. In 1969 the value of photographic equipment and supplies produced outside the United States was how many million dollars?

(A) 550
(B) 1,850
(C) 5,620
(D) 7,470
(E) 11,240

22. What was the value, in millions of dollars, of the motion-picture equipment produced in the United States in 1971 ?

(A) 184
(B) 188
(C) 193
(D) 199
(E) 203

23. In 1965 which country's total production of photographic equipment and supplies was nearest in value to the combined production of motion-picture and microfilm equipment in the United States in the same year?

(A) Italy
(B) France
(C) United Kingdom
(D) West Germany
(E) Japan

24. In 1965 the value of sensitized goods produced in the United States was approximately what percent of the value of photographic equipment and supplies produced in the world?

(A) 60%
(B) 50%
(C) 45%
(D) 40%
(E) 35%

25. From 1968 to 1969, the value of photographic equipment and supplies produced by Japan increased by approximately what percent?

(A) 22%
(B) 18%
(C) 15%
(D) 12%
(E) 10%

GO ON TO THE NEXT PAGE

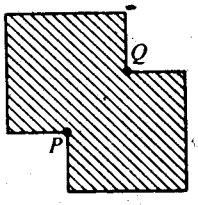
26. For which of the following sets of numbers is the product of the three numbers less than each member of the set?

I. $\frac{1}{4}, \frac{2}{3}, \frac{3}{4}$

II. $-\frac{1}{2}, -1, 4$

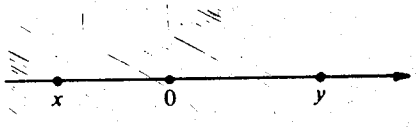
III. $-2, 3, 5$

(A) I only
(B) II only
(C) III only
(D) I and III
(E) II and III



27. The figure above is formed by two overlapping squares, each having sides of 6 centimeters in length. If P and Q are the midpoints of the intersecting sides, what is the area, in square centimeters, of the shaded region?

(A) 72
(B) 63
(C) 60
(D) 54
(E) 45



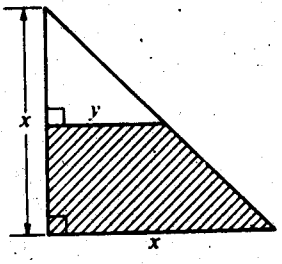
28. If x and y are numbers on the number line above, which of the following statements must be true?

I. $xy < 0$
II. $x + y < 0$
III. $x - y < 0$

(A) I only
(B) III only
(C) I and II only
(D) I and III only
(E) I, II, and III

29. If x is an odd negative integer and y is an even positive integer, then xy must be which of the following?

(A) Odd and positive
(B) Odd and negative
(C) Even and positive
(D) Even and negative
(E) It cannot be determined from the information given.



30. Which of the following expresses the area of the shaded region in the figure above?

(A) $\frac{x^2 - y^2}{2}$

(B) $\frac{x^2 + y^2}{2}$

(C) $x^2 - y^2$

(D) $\frac{x^2 + xy}{4}$

(E) $\frac{x^2 - xy}{4}$

FOR GENERAL TEST 3 ONLY

Answer Key and Percentages* of Examinees Answering Each Question Correctly

VERBAL ABILITY					
Section 3			Section 5		
Number	Answer	P+	Number	Answer	P+
1	C	93	1	A	89
2	C	91	2	B	82
3	D	79	3	E	56
4	D	69	4	C	55
5	C	68	5	D	45
6	E	54	6	D	42
7	B	58	7	A	49
8	C	90	8	D	86
9	D	70	9	E	91
10	A	49	10	E	75
11	D	46	11	B	52
12	E	36	12	E	44
13	C	34	13	C	43
14	D	28	14	D	32
15	B	31	15	D	28
16	C	53	16	B	29
17	B	26	17	B	82
18	D	76	18	E	67
19	A	50	19	C	54
20	B	56	20	D	68
21	E	58	21	A	55
22	B	70	22	B	89
23	A	70	23	C	61
24	C	84	24	C	70
25	D	66	25	A	47
26	A	40	26	A	56
27	B	85	27	B	43
28	E	87	28	C	85
29	D	79	29	C	90
30	A	78	30	A	81
31	C	70	31	C	81
32	D	54	32	E	72
33	E	32	33	D	37
34	B	33	34	C	37
35	A	24	35	E	37
36	E	22	36	A	27
37	B	22	37	A	24
			38	B	18

QUANTITATIVE ABILITY					
Section 2			Section 6		
Number	Answer	P+	Number	Answer	P+
1	A	90	1	A	83
2	A	90	2	C	74
3	B	80	3	B	80
4	A	80	4	D	75
5	C	62	5	A	71
6	B	88	6	B	77
7	D	61	7	A	66
8	D	52	8	D	66
9	A	59	9	C	57
10	B	54	10	D	51
11	D	49	11	D	45
12	C	41	12	C	47
13	D	18	13	B	41
14	C	38	14	C	33
15	A	32	15	A	29
16	C	83	16	B	90
17	E	80	17	C	82
18	D	62	18	C	77
19	A	50	19	E	69
20	B	66	20	E	62
21	C	79	21	B	93
22	C	90	22	D	85
23	B	76	23	C	75
24	B	71	24	E	57
25	A	45	25	A	45
26	A	49	26	D	46
27	C	47	27	B	64
28	A	46	28	D	54
29	D	43	29	D	62
30	E	22	30	A	35

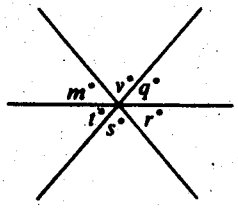
ANALYTICAL ABILITY					
Section 1			Section 4		
Number	Answer	P+	Number	Answer	P+
1	B	76	1	D	90
2	C	83	2	A	86
3	B	69	3	D	59
4	E	32	4	E	56
5	E	34	5	A	59
6	E	51	6	C	68
7	D	95	7	C	61
8	C	62	8	B	75
9	D	72	9	C	76
10	A	60	10	D	88
11	C	57	11	C	83
12	B	54	12	E	41
13	B	57	13	D	33
14	E	38	14	D	24
15	B	66	15	E	18
16	E	54	16	D	60
17	A	29	17	E	38
18	E	24	18	D	52
19	E	51	19	C	73
20	D	60	20	A	68
21	B	48	21	B	59
22	E	35	22	C	50
23	D	62	23	B	72
24	B	61	24	A	64
25	A	19	25	E	38

*Estimated P+ for the group of examinees who took the GRE General Test in a recent three-year period.

TEST 2 SECT 5

A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

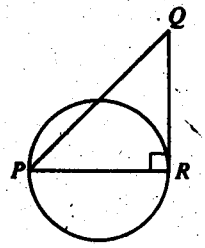
	Column A	Column B
1.	2% of (3 + 2)	3% of (2 + 3)
2.	$\frac{6}{7} - \frac{5}{6}$	$\frac{5}{6} - \frac{6}{7}$
	$2y - x = 11$ $x - 2 = 5$	
3.	x	y
4.	The remainder when 48 is divided by 5	The remainder when 48 is divided by 7
	$xy = 0$ and $x = 0$	
5.	x	y
6.	$\sqrt{38} + \sqrt{45}$	12



$m = q$, $t = 50$

7.	$q + r$	s

	Column A	Column B
8.	$\frac{x + 2y}{2}$	$\frac{2x + 4y}{4}$



PR is a diameter of the circle, and QR is tangent to the circle.

9.	The length of PR	The length of QR

The toll for a certain bridge is \$0.15 or 1 token. Tokens are sold in packs of 40 for \$4.00.

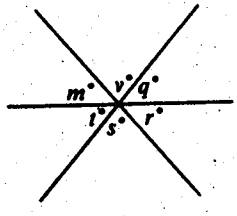
10.	The percent saved on 40 trips across the bridge if a token, rather than \$0.15, is used to pay each toll	$66\frac{2}{3}\%$

GO ON TO THE NEXT PAGE.

TEST 4 SECT 5 & 2

A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

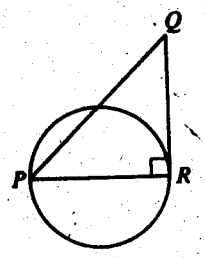
	Column A	Column B
1.	2% of (3 + 2)	3% of (2 + 3)
2.	$\frac{6}{7} - \frac{5}{6}$	$\frac{5}{6} - \frac{6}{7}$
	$2y - x = 11$ $x - 2 = 5$	
3.	x	y
4.	The remainder when 48 is divided by 5	The remainder when 48 is divided by 7
	$xy = 0$ and $x = 0$	
5.	x	y
6.	$\sqrt{38} + \sqrt{45}$	12



$m = q$, $t = 50$

7.	$q + r$	s

	Column A	Column B
8.	$\frac{x + 2y}{2}$	$\frac{2x + 4y}{4}$



PR is a diameter of the circle, and QR is tangent to the circle.

9.	The length of PR	The length of QR

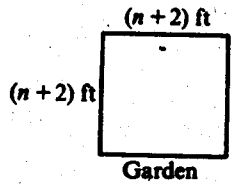
The toll for a certain bridge is \$0.15 or 1 token. Tokens are sold in packs of 40 for \$4.00.

10.	The percent saved on 40 trips across the bridge if a token, rather than \$0.15, is used to pay each toll	$66\frac{2}{3}\%$

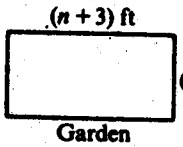
GO ON TO THE NEXT PAGE.

A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

Column A	Column B



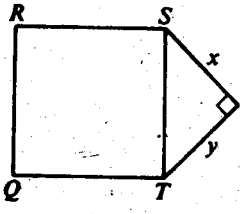
Garden Plot *A*



Garden Plot *B*

11. The area of rectangular plot *A* | The area of rectangular plot *B*

12. The average (arithmetic mean) cost per cassette for 18 cassettes costing a total of $2x$ dollars | The average (arithmetic mean) cost per cassette for 3 cassettes costing a total of $\frac{x}{3}$ dollars



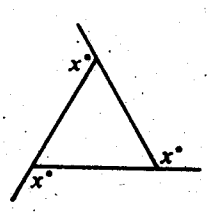
Square $QRST$ has perimeter p.

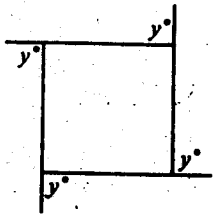
13. $x^2 + y^2$ | $\frac{p^2}{16}$

Column A	Column B

N is an integer and $0 < N < 3$.

14. $\left(\frac{1}{N} + 1\right)^N$ | $2 + \frac{1}{8}$



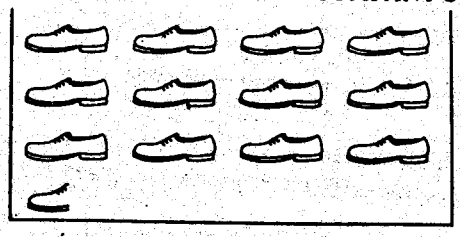


15. $x - y$ | $\frac{x + y}{7}$

GO ON TO THE NEXT PAGE.

Directions: Each of the Questions 16-30 has five answer choices. For each of these questions, select the best of the answer choices given.

PAIRS OF SHOES SOLD BY COMPANY *S*



Note: Drawn to scale.

16. If 8,750 pairs of shoes are represented in the pictograph above, how many pairs of shoes does each  represent?

(A) 350 (B) 700 (C) 730
(D) 830 (E) 1,400

17. If $x = 3$ and $y = -3$, what is the value of $(3 + x)(3 - y)$?

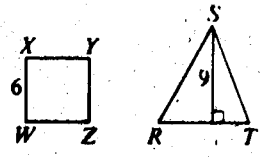
(A) -36 (B) -12 (C) 0 (D) 12 (E) 36

18. $\frac{6^2 - 4^2}{2^2} =$

(A) 1 (B) 2 (C) 3 (D) 4 (E) 5

19. If the area of a circle is 25π, then the diameter of the circle is

(A) 5
(B) 10
(C) 20
(D) 25
(E) 50



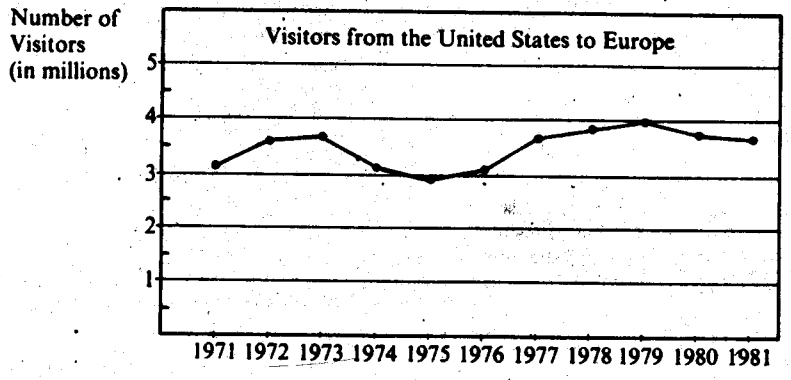
20. In the figures above, if the area of square region $WXYZ$ is equal to the area of triangular region RST, then $RT =$

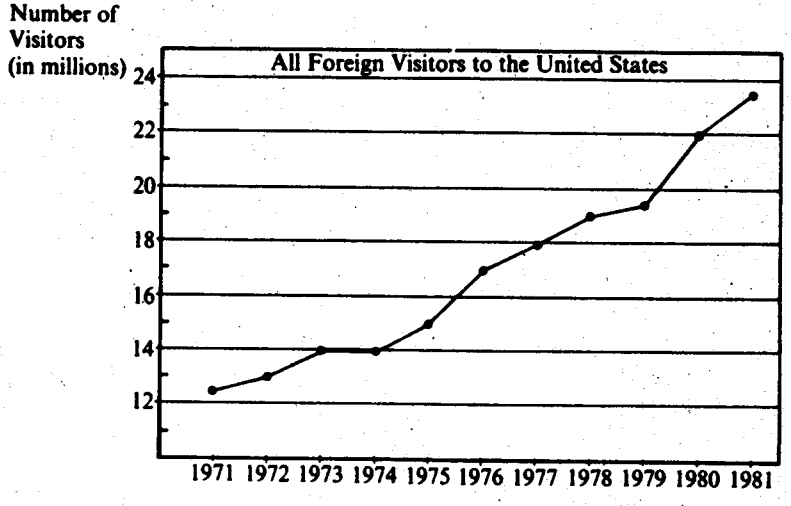
(A) 2 (B) $\frac{24}{9}$ (C) 4 (D) $\frac{48}{9}$ (E) 8

GO ON TO THE NEXT PAGE.

Questions 21-25 refer to the following graphs.

VISITORS TO AND FROM THE UNITED STATES, 1971-1981





21. The total number of visitors from the United States to Europe for 1973 and 1974 was most nearly equal to the total number for which two of the following years?

(A) 1976 and 1977
(B) 1977 and 1978
(C) 1978 and 1979
(D) 1979 and 1980
(E) 1980 and 1981

22. There were approximately how many million more foreign visitors to the United States in 1980 than in 1975 ?

(A) 22 (B) 15 (C) 8 (D) 7 (E) 0.75

GO ON TO THE NEXT PAGE.

23. In 1980 there were 17.1 million foreign visitors to New York City. This was approximately what percent of the total number of foreign visitors to the United States?

(A) 5%
(B) 22%
(C) 73%
(D) 78%
(E) 88%

24. How many years after 1971 show an increase over the previous year in both the number of visitors from the United States to Europe and the number of foreign visitors to the United States?

(A) Five (B) Six (C) Seven
(D) Eight (E) Nine

25. In 1975 if 60 percent of the foreign visitors to the United States were not from Europe, then the number of European visitors to the United States was approximately how many times as great as the number of visitors from the United States to Europe that year?

(A) 2
(B) 3
(C) 5
(D) 6
(E) 12

GO ON TO THE NEXT PAGE.

26. If $y = 2x - 1$, what is the value of x in terms of y?

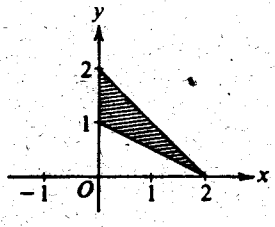
(A) $\frac{y}{2} - 1$

(B) $\frac{y}{2} - \frac{1}{2}$

(C) $\frac{y}{2} + \frac{1}{2}$

(D) $\frac{y}{2} + 1$

(E) $y + \frac{1}{2}$



27. In the figure above, what is the area of the shaded region?

(A) 1 (B) 2 (C) $2\sqrt{2}$ (D) 3 (E) 4

28. If $n = 15 \times 28 \times 26$, which of the following is NOT an integer?

(A) $\frac{n}{15}$ (B) $\frac{n}{21}$ (C) $\frac{n}{32}$ (D) $\frac{n}{35}$ (E) $\frac{n}{39}$

29. How many positive integers less than 20 are equal to the sum of a positive multiple of 3 and a positive multiple of 4?

(A) Two
(B) Five
(C) Seven
(D) Ten
(E) Nineteen

30. Two tanks, X and Y, are filled to capacity with jet fuel. Tank X holds 600 gallons more than tank Y. If 100 gallons of fuel were to be pumped from each tank, tank X would then contain 3 times as much fuel as tank Y. What is the total number of gallons of fuel in the two full tanks?

(A) 1,400
(B) 1,200
(C) 1,000
(D) 900
(E) 800

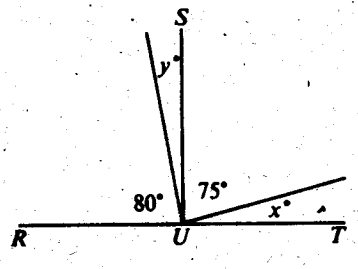
TEST 4 SECT. 5

A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

	Column A	Column B
	$3x + 4 = 13$ $11 - y = 6$	
1.	$6x$	$4y$

At noon today, Ann, Betty, Cathy, and Dot had exactly $1 apiece. Then during the next five minutes, Ann gave $1 to Betty who gave $2 to Cathy who gave $3 to Dot. None of them gave or received any other money.

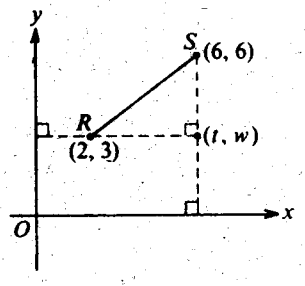
	Column A	Column B
2.	The amount of money Betty had left at five minutes past noon today	The amount of money Cathy had left at five minutes past noon today
3.	The number of prime numbers less than 15	The number of odd integers greater than 5 and less than 15
4.	$\left(\frac{3}{7} \cdot \frac{24}{25}\right) \cdot \frac{7}{3}$	1
	$x + 17 = -8$	
5.	$x + 8$	-17



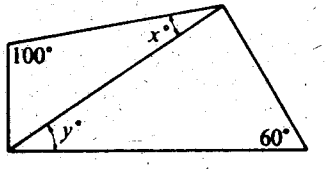
$RT \perp SU$

6.	x	y

	Column A	Column B
	$x > 0$	
7.	$\frac{x}{7}$	$\frac{5}{x}$



8.	t	w
9.	$3^3(125)$	$3^2(375)$
10.	The volume of a cube with edge of length 4 centimeters	Four times the volume of a cube with edge of length 2 centimeters



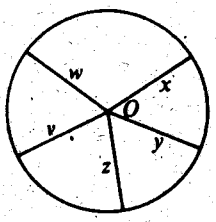
11.	x	y

The sum of 3 integers is 51.

12.	The average (arithmetic mean) of the 3 integers	The median of the 3 integers

GO ON TO THE NEXT PAGE.

A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

	Column A	Column B
	 The area of the circular region with center O is 16π, and v, w, x, y, and z represent the lengths of the line segments.	
13.	8π	$v + w + x + y + z$

	Column A	Column B
	$d > 0$	
14.	The total interest earned on d dollars invested for 3 months at 11 percent simple annual interest	$\frac{11}{3}\left(\frac{d}{100}\right)$ dollars
	$y > 0,\ y \neq 1$	
15.	$\sqrt{y}$	y^2

GO ON TO THE NEXT PAGE.

Directions: Each of the Questions 16-30 has five answer choices. For each of these questions, select the best of the answer choices given.

16. $\frac{2 \times 2 \times 2 \times 2 \times 2}{2 + 2 + 2 + 2} =$

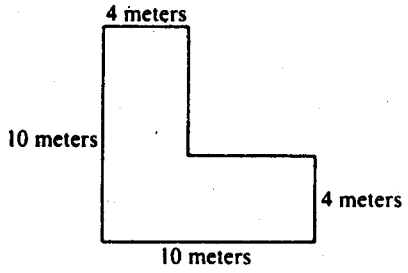
(A) 1 (B) 2 (C) 4 (D) 8 (E) 16

17. Which of the following is a multiple of both 7 and 13 ?

(A) 52 (B) 65 (C) 77 (D) 156 (E) 182

18. Mario purchased \$600 worth of traveler's checks. If each check was worth either \$20 or \$50, which of the following CANNOT be the number of \$20 checks purchased?

(A) 10
(B) 15
(C) 18
(D) 20
(E) 25



19. The figure above shows the floor dimensions of an L-shaped room. All angles shown are right angles. If carpeting costs \$20 per square meter, what will carpeting for the entire floor of the room cost?

(A) \$800
(B) \$1,280
(C) \$1,600
(D) \$1,680
(E) \$2,320

$$\frac{a + \frac{b}{c}}{\frac{d}{e}}$$

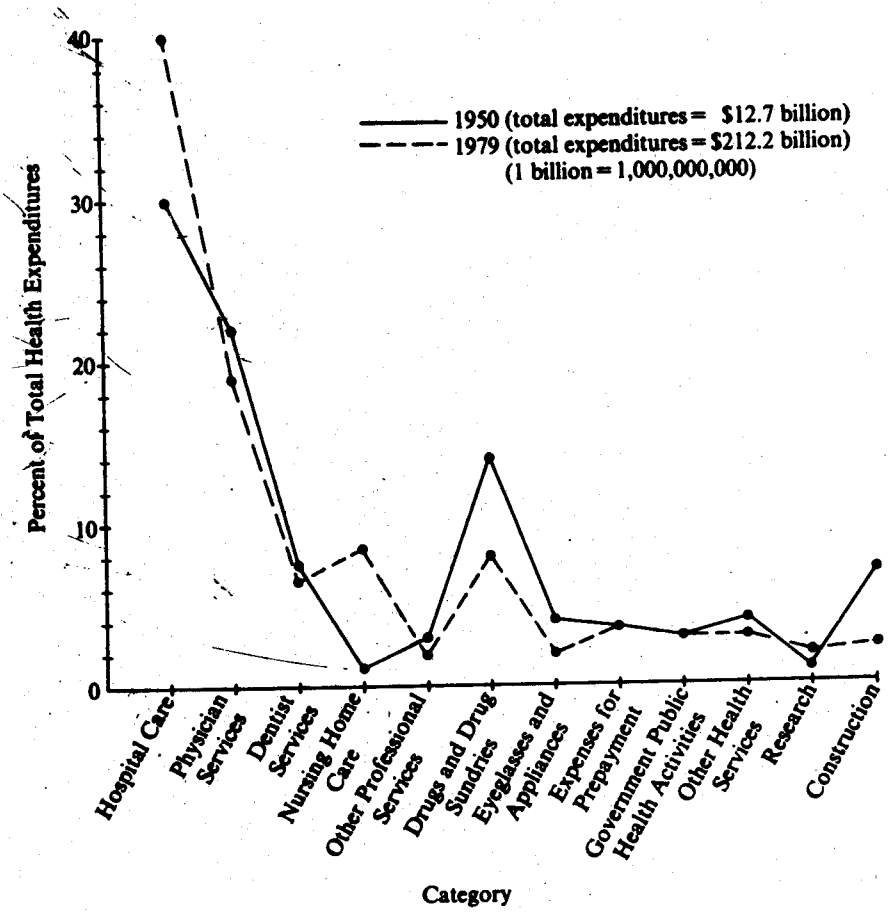
20. If the value of the expression above is to be halved by doubling exactly one of the five numbers a, b, c, d, or e, which should be doubled?

(A) a (B) b (C) c (D) d (E) e

GO ON TO THE NEXT P

Questions 21-25 refer to the following graph.

HEALTH EXPENDITURES IN THE UNITED STATES, 1950 AND 1979



21. For how many of the categories was the percent of total health expenditures greater in 1979 than in 1950?

(A) Two (B) Three (C) Four
(D) Six (E) Seven

22. Of the following categories, for which was the percent of total health expenditures in 1979 least?

(A) Dentist services
(B) Nursing home care
(C) Drugs and drug sundries
(D) Government public health activities
(E) Research

GO ON TO THE NEXT PAGE.

23. In 1979 for how many of the categories was the amount of health expenditures less than $21 billion?

(A) Two (B) Three (C) Nine
(D) Ten (E) Twelve

24. Approximately what was the ratio of health expenditures for hospital care in 1979 to health expenditures for hospital care in 1950?

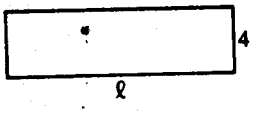
(A) $\frac{22}{1}$
(B) $\frac{17}{1}$
(C) $\frac{15}{1}$
(D) $\frac{25}{2}$
(E) $\frac{4}{3}$

25. Which of the following can be inferred from the graph?

I. The number of patients needing hospital care increased from 1950 to 1979.
II. The dollar amount of health expenditures for construction was greater in 1979 than in 1950.
III. In 1979 the dollar amount of health expenditures for dentist services was more than half the dollar amount of health expenditures for physician services.

(A) I only (B) II only (C) III only
(D) I and II (E) II and III

GO ON TO THE NEXT PAGE.



26. If the perimeter of the rectangle above is 36, then ℓ =

(A) 9 (B) 14 (C) 16 (D) 28 (E) 32

27. If $4x$ is 6 less than $4y$, then $y - x$ =

(A) -24

(B) $-\frac{3}{2}$

(C) $-\frac{2}{3}$

(D) $\frac{3}{2}$

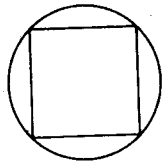
(E) 24

28. The difference between two positive numbers is 16. If the smaller of these two numbers is $\frac{3}{5}$ of the larger, what is the value of the smaller number?

(A) 18
(B) 24
(C) 30
(D) 33
(E) 40

29. $(1 - x)(x - 1)$ =

(A) $-(x - 1)^2$
(B) $(x - 1)^2$
(C) 0
(D) $x^2 - 1$
(E) $1 - x^2$



30. If a square is inscribed in a circle of radius r as shown above, then the area of the square region is

(A) $\frac{r^2}{2\pi}$ (B) $\frac{\pi r^2}{2}$ (C) πr^2 (D) r^2 (E) $2r^2$

FOR GENERAL TEST 4 ONLY

Answer Key and Percentages* of Examinees Answering Each Question Correctly

VERBAL ABILITY					
Section 1			Section 4		
Number	Answer	P+	Number	Answer	P+
1	B	96	1	C	89
2	E	89	2	A	92
3	B	80	3	A	71
4	D	51	4	C	80
5	E	39	5	B	41
6	E	39	6	C	47
7	D	28	7	B	38
8	B	84	8	C	91
9	A	61	9	E	92
10	E	64	10	D	87
11	B	65	11	C	76
12	C	49	12	A	71
13	E	36	13	A	52
14	A	29	14	A	37
15	E	35	15	A	41
16	B	22	16	E	19
17	C	70	17	D	63
18	B	57	18	E	51
19	E	62	19	C	36
20	D	58	20	B	84
21	C	56	21	D	48
22	D	40	22	D	42
23	E	63	23	A	27
24	A	53	24	C	45
25	B	50	25	C	60
26	D	46	26	B	61
27	E	63	27	E	45
28	C	90	28	D	84
29	B	84	29	D	77
30	E	80	30	C	73
31	B	74	31	B	74
32	D	75	32	A	39
33	B	54	33	B	44
34	A	35	34	B	46
35	A	37	35	C	45
36	C	39	36	A	35
37	C	33	37	E	20
38	A	23	38	D	10

QUANTITATIVE ABILITY					
Section 2			Section 5		
Number	Answer	P+	Number	Answer	P+
1	B	93	1	B	84
2	A	87	2	C	87
3	B	82	3	A	82
4	B	85	4	B	85
5	D	77	5	C	84
6	A	71	6	A	80
7	A	74	7	D	77
8	C	69	8	A	65
9	D	62	9	C	64
10	B	66	10	A	61
11	A	65	11	D	62
12	C	53	12	D	53
13	C	37	13	A	55
14	D	45	14	B	35
15	C	37	15	D	30
16	B	81	16	C	91
17	E	80	17	E	87
18	E	91	18	C	88
19	B	56	19	B	76
20	E	62	20	D	63
21	A	90	21	B	70
22	D	90	22	E	91
23	D	68	23	D	77
24	B	54	24	A	22
25	A	46	25	B	27
26	C	65	26	B	68
27	A	52	27	D	53
28	C	43	28	B	80
29	D	27	29	A	54
30	A	34	30	E	43

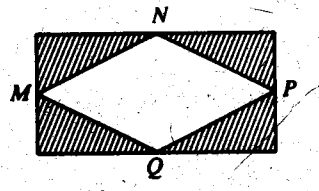
ANALYTICAL ABILITY					
Section 3			Section 6		
Number	Answer	P+	Number	Answer	P+
1	D	73	1	D	86
2	B	72	2	A	75
3	D	51	3	B	61
4	E	74	4	A	66
5	B	80	5	E	44
6	C	65	6	E	83
7	A	72	7	B	56
8	C	54	8	C	82
9	E	53	9	C	77
10	D	50	10	D	51
11	C	54	11	D	75
12	D	58	12	B	40
13	A	43	13	A	37
14	D	43	14	E	41
15	E	32	15	D	66
16	A	33	16	B	58
17	B	64	17	C	35
18	B	38	18	D	32
19	A	43	19	A	27
20	E	30	20	A	72
21	C	61	21	B	27
22	C	48	22	C	36
23	D	48	23	C	47
24	A	39	24	B	41
25	E	30	25	E	30

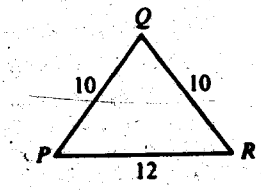
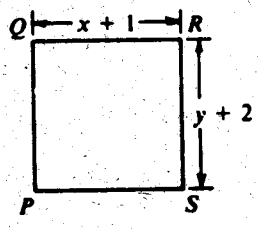
*Estimated P+ for the group of examinees who took the GRE General Test in a recent three-year period.

TEST 5 SECT 3

A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

Column A	Column B
A man left $\frac{1}{3}$ of his estate to his widow and designated that the remainder be divided equally among his 4 sons.	
1. The fraction of the estate designated for each son	$\frac{1}{12}$

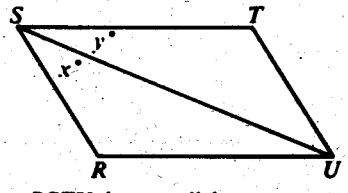
Column A	Column B
 M, N, P, and Q are midpoints of the sides of the rectangle.	
2. The sum of the areas of the shaded regions	The area of the unshaded region $MNPQ$
3. $\sqrt{38,205}$	200
a, b, and c are negative integers.	
4. abc	$a(b + c)$

Column A	Column B
	
5. The altitude of $\triangle PQR$ from Q	6
 $PQRS$ is a square.	
6. x	y
$x > 1$	
7. $(x + 5)(2x + 3)$	$(x + 3)(2x + 5)$
$x > 0$	
8. $\frac{x}{14}$	$\frac{14}{x}$

GO ON TO THE NEXT PAGE.

A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

	Column A	Column B
	The largest circular tabletop that can be cut from a certain square piece of wood has a circumference of 105π inches.	
9.	The length of a side of the piece of wood before the tabletop is cut from it	105π inches
	$10^{20} = \frac{10^{100}}{10^n}$	
10.	n	5
	Maria's weekly net salary of \$585 is 65 percent of her weekly gross salary.	
11.	Maria's weekly gross salary	\$900
12.	The number of different positive divisors of 12	The number of different positive divisors of 50

	Column A	Column B
	$x - y \neq 0$	
13.	$\frac{3x^2 - 3y^2}{x - y}$	$3(x - y)$
	$3 \times 3 \times n = 2 \times 2 \times p$ $np \neq 0$	
14.	$\frac{n}{p}$	$\frac{2}{3}$
	 *RSTU* is a parallelogram.	
15.	x	y

GO ON TO THE NEXT PAGE.

Directions: Each of the Questions 16-30 has five answer choices. For each of these questions, select the best of the answer choices given.

16. If $8x - 3y = 24$ and $y = 0$, then $x =$

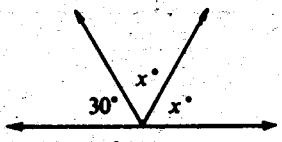
(A) 3 (B) 4 (C) 5 (D) 6 (E) 8

17. If the sum of 3, 7, and x is 18, then the average (arithmetic mean) of 3, 7, and x is

(A) 6 (B) 7 (C) 8 (D) 9 (E) 10

18. If $n = 3$, what is the value of $2^{2n} + 1$?

(A) 9 (B) 13 (C) 17 (D) 33 (E) 65



19. In the figure above, $x =$

(A) 30 (B) 35 (C) 60 (D) 75 (E) 150

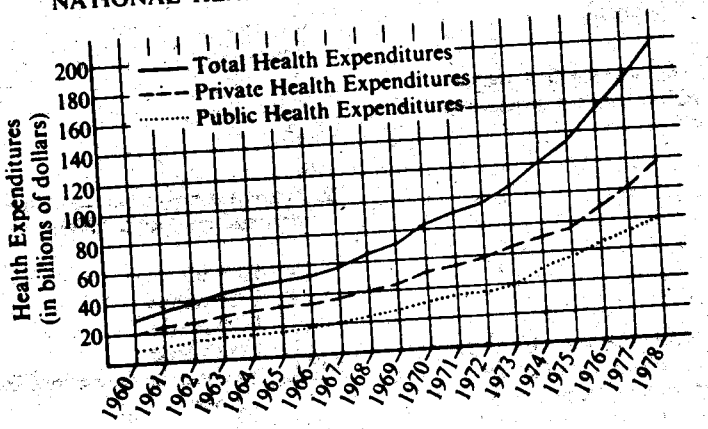
20. Three individuals contributed \$800 each toward the purchase of a computer. If they bought the computer on sale for \$1,950 plus 10 percent sales tax, how much money should be refunded to each individual?

(A) \$65
(B) \$85
(C) \$150
(D) \$195
(E) \$255

GO ON TO THE NEXT PAGE.

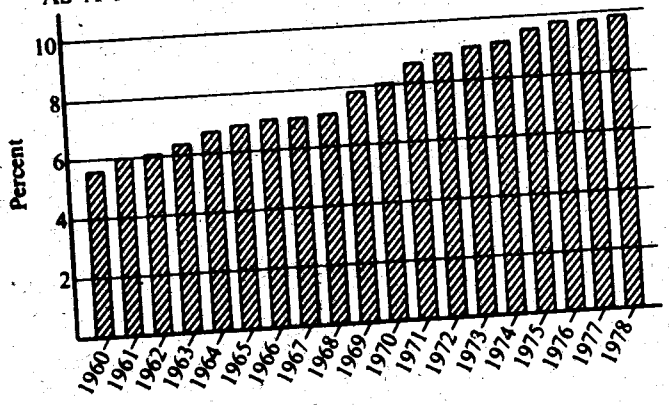
Questions 21-25 refer to the following graphs.

NATIONAL HEALTH EXPENDITURES: 1960 TO 1978



Note: Drawn to scale.

TOTAL NATIONAL HEALTH EXPENDITURES AS A PERCENT OF GROSS NATIONAL PRODUCT



Note: Drawn to scale.

GO ON TO THE NEXT PAGE.

21. In 1969 approximately what was the amount of private health expenditures?

(A) $25 billion (B) $30 billion (C) $45 billion
(D) $50 billion (E) $70 billion

22. For the years shown, what was the first year in which the amount of public health expenditures was at least $30 billion?

(A) 1960
(B) 1962
(C) 1964
(D) 1968
(E) 1970

23. In 1976 approximately what was the ratio of the amount of private health expenditures to the amount of public health expenditures?

(A) 3:1
(B) 2:1
(C) 3:2
(D) 2:3
(E) 1:3

24. For the year in which public health expenditures were closest to $40 billion, total health expenditures were approximately what percent of the gross national product?

(A) 10%
(B) 9%
(C) 8%
(D) 7%
(E) 6%

25. Approximately what was the amount of the gross national product in 1968 ?

(A) $600 billion
(B) $750 billion
(C) $800 billion
(D) $950 billion
(E) It cannot be determined from the information given.

GO ON TO THE NEXT PAGE.

26. If x and y are integers and $x > y > 0$, how many integers are there between, but not including, x and y?

(A) $x - y$
(B) $x + y$
(C) $x - y - 1$
(D) $x + y - 1$
(E) $x - y + 1$

27. For which of the following expressions would the value be less if 350 were replaced by 347?

I. $2{,}500 - 350$

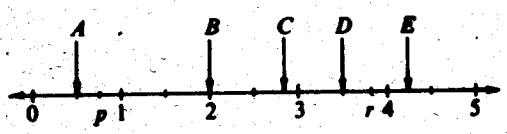
II. $\frac{1}{350}$

III. $\frac{1}{1 + \frac{1}{350}}$

(A) None (B) II only (C) III only
(D) I and III (E) II and III

28. If the circumference of circle P is 15.714 and the circumference of circle Q is 6.28, then the diameter of circle P minus the diameter of circle Q is approximately equal to

(A) 1.5
(B) 3.0
(C) 5.5
(D) 9.0
(E) 9.4



Note: Figure drawn to scale.

29. According to the number line above, which of the following points has a coordinate most nearly equal to $p \times r$?

(A) A (B) B (C) C (D) D (E) E

30. A rectangular rug covers half of a rectangular floor that is 9 feet wide and 12 feet long. If the dimensions of the rug are in the same ratio as those of the floor, how many feet long is the rug?

(A) 6
(B) $\frac{21}{2}$
(C) $2\sqrt{7}$
(D) $6\sqrt{2}$
(E) $4\sqrt{6}$

TEST 5 SECT 6

A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

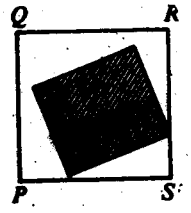
	Column A	Column B
1.	$\left(\frac{2}{3}\right)^2$	$\frac{2}{3^2}$

There are two diving boards at a certain pool. The height of the lower board is 3 meters. The height of the higher board is 1 meter greater than twice the height of the lower board.

2.	The height of the higher board minus the height of the lower board	4.5 meters

$x = 3$
$y = -1$

3.	$y - x$	xy^2

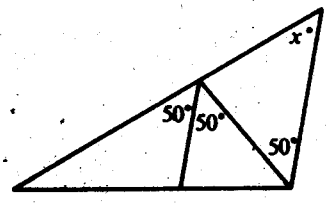


4.	The perimeter of square *PQRS*	The perimeter of the shaded rectangular region
5.	A number between 5 and 10	A number between 8 and 14

	Column A	Column B
6.	$\frac{3}{4} + \frac{1}{3}$	1

$y < z < x$
$y < w$

7.	w	x



8.	x	50
9.	The number of minutes in 3.15 hours	The number of minutes in 3 hours 15 minutes

$\frac{1}{2}x = \frac{1}{3}y = \frac{1}{5}z$

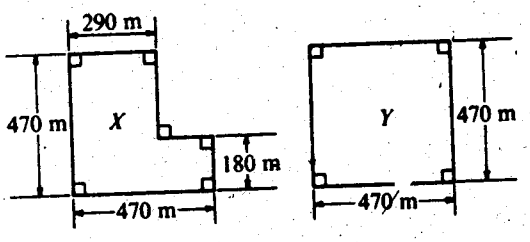
$z = 30$

10.	$x + y$	30

GO ON TO THE NEXT PAGE.

A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

Column A	Column B

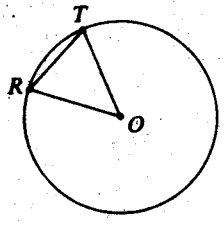


Fields X and Y are to be enclosed with fencing that costs \$24 per meter.

	Column A	Column B
11.	The cost of the fencing needed to enclose X	The cost of the fencing needed to enclose Y

$n > 0$

	Column A	Column B
12.	$\frac{n(n+1)+n+1}{(n+1)^2}$	1

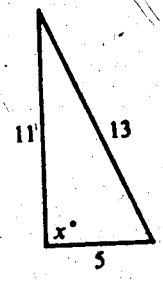


The circle has center O and $RT = 5$.

	Column A	Column B
13.	The circumference of the circle	10π

x, y, and z are positive integers, and $z > x > y$.

	Column A	Column B
14.	The remainder when z is divided by x	The remainder when z is divided by y



	Column A	Column B
15.	x	90

GO ON TO THE NEXT PAGE.

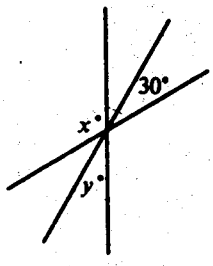
Directions: Each of the Questions 16-30 has five answer choices. For each of these questions, select the best of the answer choices given.

16. A certain machine fills a bag with 7 ounces of potato chips in 3.5 seconds. At this rate how many seconds will it take the machine to fill a bag with 15 ounces of potato chips?

(A) 6.5 (B) 7.0 (C) 7.5
(D) 8.0 (E) 11.5

17. On a number line, the distance between the two points with coordinates -5 and 1 is how much less than the distance between the two points with coordinates 2 and 14?

(A) 6 (B) 8 (C) 10 (D) 12 (E) 16

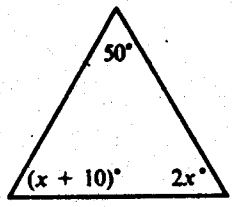


18. In the figure above, if $x = 4y$, then $y =$

(A) 30 (B) 36 (C) 37.5 (D) 40 (E) 50

19. If 45 percent of n is 405, what is 35 percent of n?

(A) 61
(B) 64
(C) 142
(D) 250
(E) 315

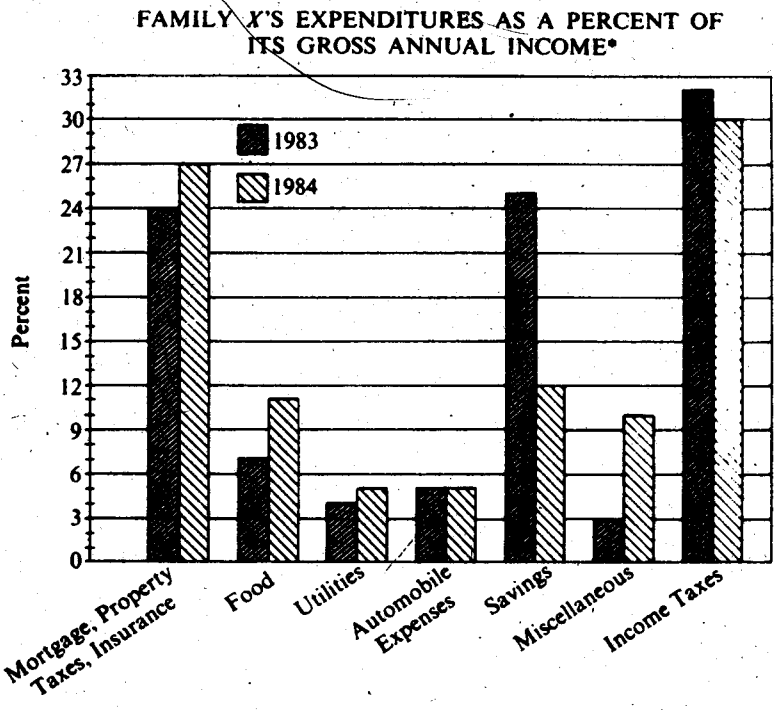


20. In the triangle above, $x =$

(A) 65 (B) 40 (C) 35 (D) 25 (E) 10

GO ON TO THE NEXT PAGE.

Questions 21-25 refer to the following graph.



* In 1983, 100% = $50,000
In 1984, 100% = $45,000

Note: Drawn to scale.

GO ON TO THE NEXT PAGE.

21. In 1984 for how many of the seven categories listed were expenditures greater than 9 percent of Family X's gross annual income?

(A) Two (B) Three (C) Four
(D) Five (E) Six

22. In 1983 Family X used a total of 49 percent of its gross annual income for two of the categories listed. What was the total amount of Family X's income used for those same categories in 1984?

(A) $16,200
(B) $17,550
(C) $19,500
(D) $22,050
(E) $24,500

23. From 1983 to 1984 the increase in Family X's miscellaneous expenses was most nearly which of the following?

(A) $3,000
(B) $3,150
(C) $3,500
(D) $4,500
(E) $5,000

24. Family X's gross income is the sum of Mr. X's income and Mrs. X's income. In 1983 Mr. and Mrs. X each had an income of $25,000. If Mr. X's income increased by 10 percent from 1983 to 1984, by what percent did Mrs. X's income decrease for the same period?

(A) 10%
(B) 15%
(C) 20%
(D) 25%
(E) 30%

25. By approximately what percent did the amount that Family X put into savings decrease from 1983 to 1984?

(A) 13%
(B) 23%
(C) 35%
(D) 45%
(E) 57%

GO ON TO THE NEXT PAGE

26. Of the following, which is greatest?

(A) $\frac{1}{2}$ (B) $\frac{7}{15}$ (C) $\frac{49}{100}$

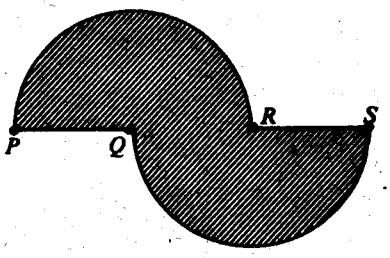
(D) $\frac{126}{250}$ (E) $\frac{1,999}{4,000}$

27. If x, y, and z are consecutive positive integers, with $x < y < z$ and $x + y + z$ an even number, which of the following could be the value of z?

(A) 1 (B) 2 (C) 4 (D) 5 (E) 8

28. If $x^2 = 68$, which of the following could be true?

(A) $-9 < x < -8$
(B) $-8 < x < -7$
(C) $-8 < x < 8$
(D) $7 < x < 8$
(E) $9 < x < 10$



29. In the figure above, arcs PR and QS are semicircles with centers at Q and R respectively. If $PQ = 5$, what is the perimeter of the shaded region?

(A) $5\pi + 5$
(B) $5\pi + 15$
(C) $10\pi + 10$
(D) $10\pi + 15$
(E) 100π

30. If \$4,500 was invested in a bond fund when the price per share was \$9 and \$3,000 was invested in the fund when the price per share was \$10, what was the average (arithmetic mean) price per share purchased?

(A) \$9.625
(B) \$9.50
(C) \$9.40
(D) \$9.375
(E) \$9.20

FOR GENERAL TEST 5 ONLY

Answer Key and Percentages* of Examinees Answering Each Question Correctly

VERBAL ABILITY					
Section 2			Section 4		
Number	Answer	P+	Number	Answer	P+
1	A	89	1	C	93
2	C	75	2	E	75
3	B	76	3	C	83
4	E	69	4	A	66
5	A	78	5	E	65
6	E	41	6	E	51
7	B	10	7	E	15
8	A	83	8	B	85
9	B	70	9	A	80
10	B	71	10	A	54
11	D	56	11	B	51
12	D	67	12	D	52
13	A	61	13	A	37
14	C	38	14	E	30
15	C	29	15	A	27
16	D	29	16	B	26
17	C	73	17	B	83
18	C	55	18	E	35
19	A	60	19	D	65
20	C	43	20	A	57
21	E	18	21	D	61
22	C	64	22	B	39
23	A	56	23	C	66
24	C	58	24	A	59
25	A	37	25	C	73
26	D	75	26	C	50
27	A	55	27	B	50
28	B	90	28	B	93
29	D	88	29	A	92
30	B	76	30	B	80
31	D	42	31	C	74
32	A	46	32	C	57
33	E	47	33	E	53
34	A	40	34	E	35
35	D	25	35	D	42
36	E	27	36	B	29
37	E	24	37	E	23
38	B	21	38	A	21

QUANTITATIVE ABILITY					
Section 3			Section 6		
Number	Answer	P+	Number	Answer	P+
1	A	85	1	A	92
2	C	82	2	B	91
3	B	85	3	B	87
4	B	76	4	A	78
5	A	75	5	D	84
6	A	75	6	A	88
7	A	69	7	D	85
8	D	59	8	C	77
9	B	62	9	B	79
10	A	54	10	C	64
11	C	58	11	C	65
12	C	49	12	C	63
13	D	42	13	D	57
14	B	42	14	D	45
15	D	26	15	A	28
16	A	94	16	C	87
17	A	84	17	A	80
18	E	81	18	A	85
19	D	76	19	E	83
20	B	73	20	B	83
21	C	93	21	D	86
22	E	85	22	B	57
23	C	76	23	A	49
24	B	82	24	E	36
25	D	38	25	E	23
26	C	58	26	D	69
27	C	45	27	D	62
28	B	50	28	A	58
29	C	50	29	C	63
30	D	26	30	D	44

ANALYTICAL ABILITY					
Section 1			Section 5		
Number	Answer	P+	Number	Answer	P+
1	D	78	1	B	93
2	D	86	2	C	71
3	A	90	3	D	57
4	D	70	4	A	69
5	C	68	5	B	76
6	B	60	6	D	66
7	E	66	7	B	59
8	A	86	8	C	87
9	C	67	9	A	86
10	A	81	10	E	77
11	C	69	11	E	44
12	E	58	12	E	51
13	C	82	13	D	42
14	D	24	14	C	58
15	D	48	15	E	21
16	B	32	16	A	41
17	E	36	17	C	36
18	B	54	18	A	23
19	B	38	19	A	30
20	C	42	20	E	39
21	E	22	21	E	16
22	E	18	22	C	32
23	A	49	23	E	61
24	D	39	24	B	64
25	E	26	25	D	68

*Estimated P+ for the group of examinees who took the GRE General Test in a recent three-year period.